

Summary of *Salmonella* serotype Enteritidis Outbreaks Reported in 1998

As of March 1, 1999, 45 confirmed outbreaks of SE were reported, affecting U.S. residents in 19 states (Table). Of the 666 ill persons, 90 (14%) were hospitalized, and 3 died. Although the total number of SE outbreaks reported in 1998 is similar to the number reported in 1997, there were approximately half as many illnesses. This continues a recent trend whereby the median number of cases per outbreak has decreased from 17 in 1993 to 10 in 1998.

Of the 18 outbreaks in 1998 for which a vehicle could be confirmed, 15 (83%) were associated with eggs; implicated vehicles included chiles rellenos, homemade ice cream, lasagna, stuffing, tira misu, and ziti. Between 1993 and 1997, an average of 80% of vehicle-confirmed outbreaks have been egg-associated, with a range of 68%-95%.

Twenty-three (51%) of the 45 outbreaks occurred in commercial food establishments (e.g. restaurants, delis), compared with 31 (70%) in 1997 (Table). Twelve (27%) of outbreaks occurred in private homes, compared with 7 (16%) in 1997. Three (6%) of outbreaks and all of the reported deaths occurred in nursing homes in 1998, compared with one nursing home outbreak and no associated deaths in 1997.

SE phage type 4 continues to emerge, causing an increase in sporadic illness in the western United States. Of the 30 outbreaks for which an isolate was submitted to CDC for phage typing, 15 (50%) were SE PT 4 (Table). Of these, 11 (73%) occurred in California, two in Utah, and one each in Hawaii and Wyoming. Although most outbreak investigations and studies of sporadic illness due to SE phage type 4 in the United States have implicated eggs, in Europe SE phage type 4 is also transmitted by eating chicken. In the United States in 1998, one vehicle-confirmed outbreak and two outbreaks in which the vehicle was suspected but not confirmed were associated with eating chicken.

Phage type 8 accounted for 4 (14%) of 29 SE outbreaks in 1998; of these, 3 (75%) occurred in eastern states. Phage type 13a caused 6 (21%) of the SE outbreaks, and phage type 6a, rare in the United States, was responsible for 2 (7%) outbreaks.

While the number of SE outbreaks in the New England and Mid-Atlantic states decreased from 42 (67%) of 63 reported outbreaks in 1992 to 8 (18%) of 45 SE outbreaks in 1998, the number reported by the Mountain and Pacific states increased from 3 (5%) in 1992 to 23 (51%) in 1998. Although the precise reason for the decrease in the northeastern states is unclear, it may be a result of increased participation in egg quality assurance programs on farms and improvements in egg preparation practices.

The high incidence of SE infections, as well as the association of SE with foods containing raw or lightly cooked eggs, highlights the importance of conducting timely egg tracebacks to prevent SE outbreaks. To this end, CDC's Foodborne and Diarrheal Diseases Branch requests notification of SE outbreaks and outbreaks of group D *Salmonella* infections as soon as health departments become aware of them, regardless of whether or not a vehicle has been implicated. This preliminary notification need not be in the form of a final report. Early notification of possible egg-associated outbreaks will allow FDA and/or the Department of Agriculture in your state to prepare to conduct rapid tracebacks.

***Salmonella* serotype Enteritidis outbreaks reported to CDC, by Date of First Onset of Illness January 1 - December 31, 1998**

Updated March 1, 1999

CDC	Onset						Exposure	Vehicle	Vehicle	Contain		
		State	City or County	Cases	Hosp	Deaths				Confirmed ? ¹	Shell Eggs?	Phage type
ID#	Month			(#)	(#)	(#)	Location	Suspected Vehicle				
1	1	CA	Sherman Oaks	5	3	0	Restaurant	Turkey stuffing	Y	Y	4	
2	1	CA	Los Angeles	26	3	0	Home	Lasagna	Y	Y	4	
3	1	MD	Montgomery Co.	8	0	0	Restaurant	Tira misu	Y	Y	8	
4	1	MD	Montgomery	2	0	0	Restaurant	Chicken burritos	N	N	.	
5	1	PA	Philadelphia	4	2	0	Restaurant	Unknown	N	.	13a	
6	1	WA	Whatcom Co.	4	0	0	Private Home	Homemade egg nog	N	Y	.	
7	2	CA	Arcadia	14	1	0	Restaurant	Chicken enchilada	Y	N	4	
8	2	CT	Fairfield Co.	12	1	0	Restaurant	Eggs	N	Y	13a	
9	3	CA	Lakewood	6	1	0	Private home	Homemade ice cream	N	Y	4	
10	3	CA	Palmdale	8	0	0	Restaurant	Unknown	N	.	4	
11	3	IL/WI	McHenry Co.	2	0	0	Restaurant	Hollandaise sauce	N	Y	13a	
12	3	VA	Chilhowie	19	5	0	Restaurant	Cream pies	Y	Y	8	
13	4	UT	Salt Lake Co.	21	2	0	Restaurant	Multiple egg products	N	Y	4	
14	5	UT	Utah Co.	4	0	0	Restaurant	Caesar salad	N	Y	4	
15	6	NJ	Passaic Co.	11	2	2	Nursing home	Unknown	N	.	8	
16	6	OH	Franklin Co.	49	2	0	Restaurant	Unknown	N	.	13a	
17	7	AZ	Maricopa	58	11	0	Restaurant	Chile relleno	Y	Y	6a	
18	7	CA	Pico Rivera	6	2	0	Restaurant	Hamburgers	N	N	4	
19	7	CA	Azusa	4	2	0	Private home	Boiled chicken	N	N	4	
20	7	CO	Denver Co.	5	0	0	Restaurant	Unknown	N	.	13a	
21	7	IL	Ogle Co.	8	4	0	Restaurant	Baked potato w/ cheese	Y	N	.	
22	7	MD	Queen Anne's	5	0	0	Prison	Unknown	N	.	.	
23	7	PA	Dauphin Co.	6	1	0	Private home	Homemade ice cream	Y	Y	RDNC	
24	8	CA	Northridge	4	0	0	Restaurant	Unknown	N	.	.	
25	8	HI	Oahu	40	3	0	Community	Eggs	Y	Y	4	
26	8	MD	Harford	16	2	0	Catered dinner	Cannoli / cream puffs	Y	U	.	
27	8	TX	Greenville	11	11	0	Private home	Homemade ice cream	Y	Y	8	

28	9	CA	San Francisco	23	1	0	Restaurant	Stir-fried crab	N	N	1
29	9	CA	Malibu	6	0	0	Restaurant	Unknown	N	.	4
30	9	MD	Prince George's	50	7	0	Party	Mexican cake	Y	Y	.
31	9	MD	Frederick	10	0	0	Camp	Scrambled eggs	N	Y	.
32	9	NV	Eureka	71	4	0	Restaurant	Ziti	Y	Y	.
33	9	WI	Oconto Co.	4	0	0	Restaurant	Eggs	N	Y	13a
34	9	WY	Unita Co.	6	0	0	Community	Unknown	N	.	4
35	10	CA	Lakewood	18	2	0	Church	Chile rellenos	Y	Y	4
36	10	CA	Los Angeles	17	0	0	Nursing home	Pureed diet	Y	Y	4
37	10	CA	Los Angeles	13	1	0	Restaurant	Turkey salad	N	N	6a
38	10	CA	Montebello	4	4	1	Nursing home	Eggs	N	Y	.
39	11	CA	Long Beach	10	0	0	Private home	Stuffing	N	U	.
40	11	PA	Lebanon Co.	12	3	0	Private home	Stuffing	Y	Y	.
41	11	MA	Mansfield	7	0	0	Restaurant	Pork fried rice	N	Y	RDNC
42	11	WI	Racine Co.	18	3	0	Private home	Turkey	N	N	.
43	11	WV	Elkview/Kanawha	11	0	0	Private home	Unknown	N	.	.
44	12	PA	Carbon Co.	21	7	0	Private home	Stuffing	Y	Y	.
45	12	PA	Snyder Co.	7	0	0	Private home	Oyster stuffing	Y	Y	.

"," indicates missing or unknown data

¹ Based on reliable epidemiologic information, statistical implication, or SE isolation from remaining food samples

RDNC = Reacted, but did not conform (various phage lysis patterns)